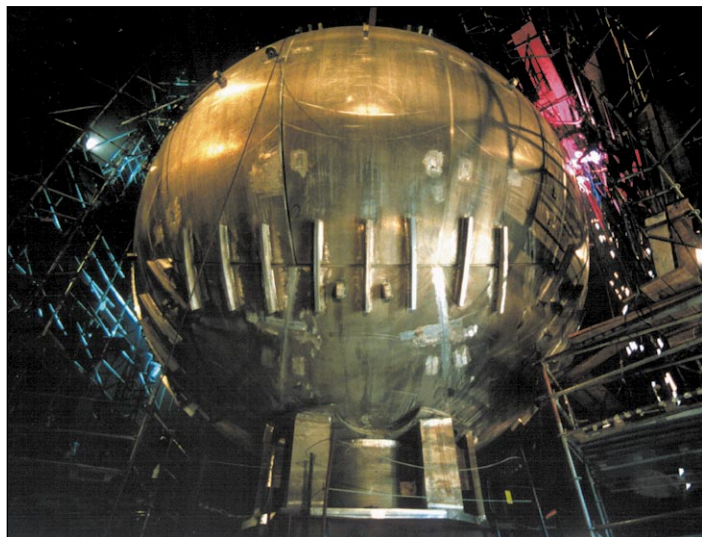
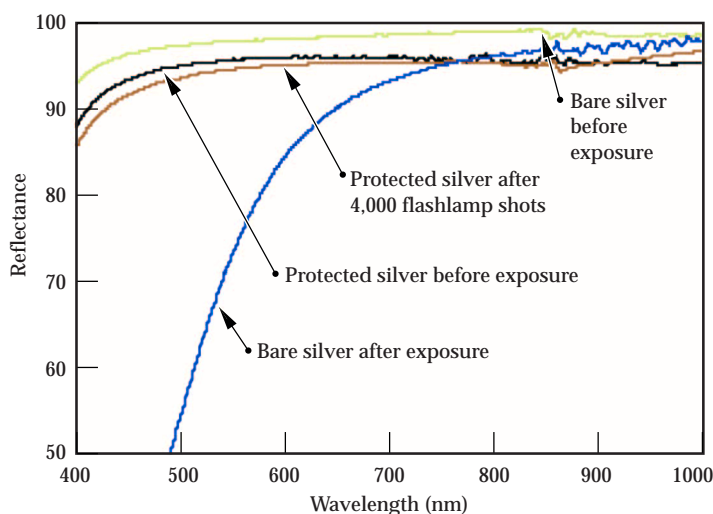


NIF Target Chamber Welding Begun. The 18 plates of the NIF target chamber have been assembled and are ready for final welding. The chamber's aluminum walls are four inches thick and will have 118 diagnostic ports, 24 direct-drive ports, and 48 indirect-drive ports. The holes for these ports will be precision-drilled by Pitt-Des Moines, Inc., the contractor in charge of target chamber construction.



Welding has begun on the target chamber, which is 30 feet across.

NIF Amplifier Coatings. NIF amplifiers will use an advanced thin-film coating on internal reflective surfaces consisting of sputtered, high-purity silver and a special protective overlayer. This coating preserves high-reflec-

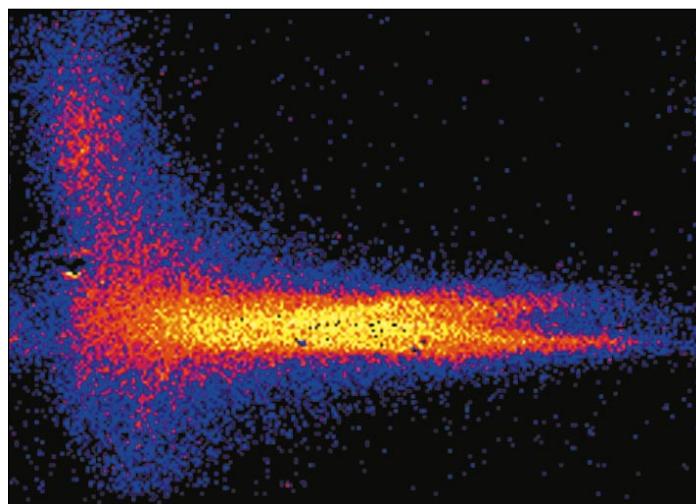


Tests on small samples show that the protected silver will retain its reflectivity much longer than bare silver in NIF.

tivity surfaces for long periods of operation even in the presence of intense flashlamp light and typical airborne contaminants. These new protected reflectors will need to be replaced much less often than reflectors employed in current solid-state lasers, ensuring both higher performance and lower operating costs.

Nova Experiments Win Award. Robert Cauble, Peter Celliers, Gilbert Collins, and Luiz Da Silva won the Excellence in Plasma Physics Research Award from the Division of Plasma Physics (DPP) of the American Physical Society (APS). The award given to them this month at the DPP meeting in New Orleans is for their work measuring the equation of state of hydrogen. Also at the meeting, the APS recognized as new fellows Luiz Da Silva, Guy Dimonte, and Gail Glendinning.

Radiative Supersonic Jets. Astrophysical jets, such as the well-known Herbig-Haro object HH47, have emerged as galactic laboratories for the study of radiative hydrodynamics. In collaboration with the University of Maryland, we are developing experiments on the Nova laser at LLNL and the Gekko laser at Osaka University, Japan, to study radiative jets. In the first of these experiments, we used five beams of Nova to directly drive the interior of a gold cone. The ablated gold plasma coalesces on axis to form a hot, radiative, high-velocity (~700 km/s) jet. The jet temperature is initially high (~1 keV), but quickly cools through radiative losses, resulting in a radiative collapse of the jet on axis. In simulations without these radiation effects, the jet remains hot much longer and its shape is more diffuse than in the fully radiative simulation.



Nova-produced radiative jet.

For comments about content of the *Monthly Highlights*, contact Bob Kauffman (925) 422-0419.

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Work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.